

**Abstract**

Systems and methods are provided for annotating software with performance information. The computer code is compiled into assembler code, the assembler code is translated into a simulation model, expressed in assembler-level source code. The simulation model is annotated with information for calculating various performance parameters of the software, such as timing information, or resource usage information. The simulation model is then re-compiled and executed on a simulator, optionally including a hardware simulation model, and the performance information is computed from the simulation.